

IN THE CLAIMS

Please cancel claims 3-13, 18-25, 29-31, 33-34, 38-41, 43-45, 47, 49-51, 53-54, 58-61, 63-65, 68-81, 88-103, 106-119, 126-141, 144, 146-148, 155-165 without prejudice or disclaimer of their underlying subject matter for the purpose of filing a divisional application.

Please amend the claims as follows.

1. (currently amended) A current drive circuit for supplying a drive current to a driven object, including:

a control line,

a signal line to which a signal current having a current level in accordance with information is supplied,

a receiving part ~~for having a fetch use transistor, the~~
fetch use transistor fetching the signal current from the signal line when the control line is selected,

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a converting part ~~for having a conversion use transistor and~~
a capacitor, the conversion use transistor converting a current level of the fetched signal current to a voltage level and the capacitor holding the voltage level ~~same~~, and

a drive part for converting the held voltage level ~~signal~~ to ~~a the drive current signal~~ and outputting the drive current to the driven object,

wherein the capacitor is electrically isolated from the signal line and driven object when the drive current is outputted to the driven object.

2. (currently amended) A drive current circuit as set forth in claim 1, wherein the ~~converting part includes a~~ conversion use transistor is provided with a control terminal, a first terminal, and a second terminal and a the capacitor is connected to the control terminal.

3-13. (canceled)

14. (currently amended) ~~A current drive circuit as set forth in claim 2~~ A current drive circuit for supplying a drive current to a driven object, including:

a control line,

a signal line to which a signal current having a current level in accordance with information is supplied,

a receiving part for fetching the signal current from the signal line when the control line is selected,

a converting part for converting a current level of the fetched signal current to a voltage level and holding the same,
and

a drive part for converting the held voltage signal to a

current signal and outputting the drive current, wherein
the converting part includes a conversion use transistor
provided with a control terminal, a first terminal, and a second
terminal and a capacitor connected to the control terminal,
wherein

the drive part shares the conversion use transistor together
with the converting part in a time division manner and

the drive part separates the conversion use transistor from
the receiving part and uses the same for driving after the
conversion of the signal current is completed and passes the
drive current in a state where the held voltage level is applied
to the gate of the conversion use transistor.

15. (original) A current drive circuit as set forth in claim
14, wherein the drive part has a controlling means for cutting
off an unnecessary current via the conversion use transistor at
times other than the time of drive.

16. (original) A current drive circuit as set forth in claim
15, wherein

the controlling means comprises a control use transistor
provided with a control terminal, a first terminal, and a second
terminal, the first terminal connected to the conversion use
transistor, and the second terminal connected to the driven

object and

said control use transistor becomes nonconductive and separates the conversion use transistor and the driven object in state when the driven object is not driven and switches to the conductive state when the driven object is driven.

17. (original) A current drive circuit as set forth in claim 14, wherein the drive part has a potential fixing means for fixing the potential of a drain with reference to a source of the conversion use transistor so as to stabilize the current level of the drive current flowing through the conversion use transistor.

18-25. (canceled)

26. (currently amended) A display device, comprising:
a scanning line,
a data line to which a signal in accordance with brightness information is supplied, and

a pixel comprising a display element formed at an intersecting portion of said data line and said scanning line,
said pixel comprising

a receiving part ~~for having a fetch use transistor, the~~
fetch use transistor fetching the signal supplied to the data line when the scanning line is selected,

a converting and holding part ~~for having a first transistor~~
and a capacitor for converting and holding the fetched signal,
and

a drive part for converting the held signal and
supplying ~~it the converted signal~~ to said display element,
the capacitor being electrically isolated from the data line
and the display element when the converted signal is
supplied to the display element.

27. (original) A display device as set forth in claim 26,
wherein said fetched signal is a current, the signal held at said
converting and holding part is a voltage, and the signal supplied
to said display element is a current.

28. (currently amended) A display device as set forth in
claim 26, wherein said ~~converting and holding part comprises a~~
first transistor is provided with a control terminal and one end
of said a capacitor is connected to said control terminal.

29-31. (canceled)

32. (original) A display device as set forth in claim 26,
wherein said converting and holding part and said drive part ~~are~~
comprise the same transistor.

33-34. (canceled)

35. (original) A display device as set forth in claim 28, wherein said drive part is said first transistor.

36. (original) A display device as set forth in claim 35, further comprising a fourth transistor between said first transistor and said display element.

37. (currently amended) A display device as set forth in claim 35, wherein said display element is connected to the first terminal of said first transistor and further comprising a fourth transistor connected to the ~~second~~ first terminal of the first transistor.

38-41. (canceled)

42. (currently amended) A display device as set forth in claim 37, wherein the other end of the capacitor and is connected ~~to the second terminal of said first transistor~~ are connected to a reference potential.

43-45. (canceled)

46. (currently amended) A display device comprising:
a scanning line,
a data line to which a current signal in accordance with
brightness information is supplied, and
a pixel comprising an organic layer formed at an
intersecting portion of said data line and said scanning line,
said pixel comprising

a receiving part ~~for having~~ a fetch use transistor, the
fetch use transistor fetching the current signal supplied to
the data line when the scanning line is selected,

a converting and holding part ~~for having~~ a first
transistor and a capacitor, the first transistor converting
the fetched current signal to a voltage and the capacitor
holding the voltage ~~same~~, and

a drive part for converting the held voltage ~~signal~~ to
a drive current and supplying ~~a~~ the drive current to said
display element, the capacitor being electrically isolated
from the data line and the display element when the drive
current is supplied to the display element.

47. (canceled)

48. (currently amended) A display device as set forth in

claim 46, wherein within said converting and holding part,
~~comprises a~~ the first transistor is provided with a control
terminal and one end of the ~~a~~ capacitor is connected to said
control terminal.

49-51. (canceled)

52. (original) A display device as set forth in claim 46,
wherein said converting and holding part and said drive part are
the same transistor.

53-54. (canceled)

55. (original) A display device as set forth in claim 48,
wherein said drive part is said first transistor.

56. (original) A display device as set forth in claim 55,
further comprising a fourth transistor between said first
transistor and said display element.

57. (currently amended) A display device as set forth in
claim 55, wherein a display element is connected to the first
terminal of said first transistor and further comprising a fourth
transistor connected to the ~~second~~ first terminal of the first

transistor.

58-61. (canceled)

62. (currently amended) A display device as set forth in claim 57, wherein the other end of the capacitor and is connected to the second terminal of said first transistor are connected to a reference potential.

63-65. (canceled)

66. (currently amended) A display device comprising a scanning line drive circuit for successively selecting scanning lines,

a data line drive circuit including a current source for generating a signal current having a current level in accordance with brightness information and successively supplying the same to data lines, and

a plurality of pixels arranged at intersecting portions of the scanning lines and the data lines and including current driven type light emitting elements emitting light by receiving the supply of the drive current, wherein

each pixel comprises

a receiving part ~~for~~ having a fetch use transistor, the

fetch use transistor fetching the signal current from a data line when the scanning line is selected,

a converting part ~~for having a conversion use~~
insulating gate type field effect transistor and a
capacitor, the conversion use insulating gate type field
effect transistor converting a current level of the fetched signal current to a voltage level and the capacitor holding the voltage level ~~same~~, and

a drive part for passing a drive current having a current level in accordance with the held voltage level through the light emitting element, the capacitor being electrically isolated from the data line and the light emitting element when the drive current is passed through the light emitting element.

67. (currently amended) A display device as set forth in claim 66, wherein within the converting part, ~~includes a the~~ conversion use insulating gate type field effect transistor is provided with a gate, a source, a drain, and a channel and ~~a the~~ capacitor is connected to the gate.

68-81. (canceled)

82. (currently amended) ~~A display device as set forth in~~

~~claim 67, wherein~~ A display device comprising

a scanning line drive circuit for successively selecting scanning lines,

a data line drive circuit including a current source for generating a signal current having a current level in accordance with brightness information and successively supplying the same to data lines, and

a plurality of pixels arranged at intersecting portions of the scanning lines and the data lines and including current driven type light emitting elements emitting light by receiving the supply of the drive current, wherein

each pixel comprises

a receiving part for fetching the signal current from a data line when the scanning line is selected,

a converting part for converting a current level of the fetched signal current to a voltage level and holding the same, and

a drive part for passing a drive current having a current level in accordance with the held voltage level through the light emitting element,

wherein

the converting part includes a conversion use insulating gate type field effect transistor provided with a gate, a source, a drain, and a channel and a capacitor

connected to the gate,

the drive part shares the conversion use insulating gate type field effect transistor together with the converting part in a time division manner, and

the drive part separates the conversion use insulating gate type field effect transistor from the receiving part and uses the same for driving after the conversion of the signal current is completed and passes the drive current to the light emitting element through the channel in a state where the held voltage level is applied to the gate of the conversion use insulating gate type field effect transistor.

83. (original) A display device as set forth in claim 82, wherein the drive part comprises a controlling means for cutting off an unnecessary current flowing to the light emitting element via the conversion use insulating gate type field effect transistor at times other than the time of drive.

84. (original) A display device as set forth in claim 83, wherein the controlling means controls the voltage between terminals of two-terminal type light emitting element having a rectification function to cut off the unnecessary current.

85. (original) A display device as set forth in claim 83,

wherein

the controlling means comprises a control use insulating gate type field effect transistor inserted between the conversion use insulating gate type field effect transistor and the light emitting element, and

the control use insulating gate type field effect transistor becomes nonconductive, in state and separates the conversion use insulating gate type field effect transistor and the light emitting element when the light emitting element is not driven and switches to the conductive state when the light emitting element is driven.

86. (original) A display device as set forth in claim 83, wherein the controlling means controls a ratio between a time for cutting off the drive current when the light emitting element is not to be driven and placing the light emitting element in the non-light emitting state and a time of passing the drive current when the light emitting element is to be driven and placing the light emitting element in the light emitting and thereby to enable the control of the brightness of the pixel.

87. (original) A display device as set forth in claim 82, wherein the drive part comprises a potential fixing means for fixing the potential of the drain with reference to the source of

the conversion use insulating gate type field effect transistor in order to stabilize the current level of the drive current flowing to the light emitting element through the conversion use insulating gate type field effect transistor.

88-103. (canceled)

104. (currently amended) A pixel circuit for driving a current-driven type light emitting element arranged at an intersecting portion of a data line supplying a signal current of a current level in accordance with brightness information and a scanning line supplying a selection pulse and emitting light by the drive current, comprising

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a receiving part ~~for having a fetch use transistor, the~~
fetch use transistor fetching the signal current from said data line in response to a selection pulse from said scanning line,

a converting part ~~for having a conversion use insulating gate type field effect transistor and a capacitor, the conversion use insulating gate type field effect transistor~~ converting a current level of the fetched signal current to a voltage level and the capacitor holding the voltage level ~~same~~, and

a drive part for passing a drive current having a current level in accordance with the held voltage level through the light emitting element,

wherein the capacitor is electrically isolated from the data line and the light emitting element when the drive current is passing through the light emitting element.

105. (currently amended) A pixel circuit as set forth in claim 104, wherein the converting part includes a conversion use insulating gate type field effect transistor provided with a gate, a source, a drain, and a channel and a capacitor connected to the gate.

106-119. (canceled)

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120. (currently amended) ~~A pixel circuit as set forth in claim 105, wherein~~ A pixel circuit for driving a current-driven type light emitting element arranged at an intersecting portion of a data line supplying a signal current of a current level in accordance with brightness information and a scanning line supplying a selection pulse and emitting light by the drive current, comprising

a receiving part for fetching the signal current from said data line in response to a selection pulse from said scanning line,

a converting part for converting a current level of the fetched signal current to a voltage level and holding the same,

and

a drive part for passing a drive current having a current level in accordance with the held voltage level through the light emitting element, wherein

the converting part includes a conversion use insulating gate type field effect transistor provided with a gate, a source, a drain, and a channel and a capacitor connected to the gate,

the drive part shares the conversion use insulating gate type field effect transistor together with the converting part in a time division manner, and

the drive part separates the conversion use insulating gate type field effect transistor from the receiving part and uses the same for driving after the conversion of the signal current is completed and passes the drive current to the light emitting element through the channel in a state where the held voltage level is applied to the gate of the conversion use insulating gate type field effect transistor.

121. (original) A pixel circuit as set forth in claim 120, wherein the drive part comprises a controlling means for cutting off an unnecessary current flowing to the light emitting element via the conversion use insulating gate type field effect transistor at times other than the time of drive.

122. (original) A pixel circuit as set forth in claim 121, wherein the controlling means controls the voltage between terminals of two-terminal type light emitting element having a rectification function to cut off the unnecessary current.

123. (original) A pixel circuit as set forth in claim 121, wherein

the controlling means comprises a control use insulating gate type field effect transistor inserted between the conversion use insulating gate type field effect transistor and the light emitting element, and


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the control use insulating gate type field effect transistor becomes nonconductive in state and separates the conversion use insulating gate type field effect transistor and the light emitting element when the light emitting element is not driven and switches to the conductive state when the light emitting element is driven.

124. (original) A pixel circuit as set forth in claim 121, wherein the controlling means controls a ratio between a time for cutting off the drive current when the light emitting element is not to be driven and placing the light emitting element in the non-light emitting state and a time of passing the drive current when the light emitting element is to be driven and placing the

light emitting element in the light emitting and thereby to enable the control of the brightness of the pixel.

125. (original) A pixel circuit as set forth in claim 120, wherein the drive part comprises a potential fixing means for fixing the potential of the drain with reference to the source of the conversion use insulating gate type field effect transistor in order to stabilize the current level of the drive current flowing to the light emitting element through the conversion use insulating gate type field effect transistor.

126-141. (canceled)

 142. (currently amended) A method of driving a light emitting element for driving a current-driven type light emitting element arranged at an intersecting portion of a data line supplying a signal current of a current level in accordance with brightness information and a scanning line supplying a selection pulse and emitting light by the drive current, comprising

a receiving routine ~~for~~ using a fetch use transistor to fetching the signal current from said data line in response to a selection pulse from said scanning line,

a converting routine for using a conversion use insulating gate type field effect transistor to ~~converting~~ a current level

of the fetched signal current to a voltage level and for using a capacitor to holding the ~~same~~ voltage level, and

a drive routine for passing a drive current having a current level in accordance with the held voltage level through the light emitting element,

wherein the capacitor is electrically isolated from the data line and the light emitting element when the drive current is passed through the light emitting element.

143. (currently amended) A method of driving a light emitting element as set forth in claim 142, wherein within the converting routine,

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~~the converting routine includes a routine using a~~ the conversion use insulating gate type field effect transistor is provided with a gate, a source, a drain, and a channel and a capacitor the connected to the gate, and

~~in the routine,~~ the conversion use insulating gate type field effect transistor creates the voltage level converted by passing the fetched signal current though the channel in the receiving routine at the gate, and the capacitor holds voltage level created at the gate.

144. (canceled)

145. (original) A method of driving a light emitting element as set forth in claim 143, wherein:

said drive routines includes a routine using a drive use insulating gate type field effect transistor provided with a gate, a drain, a source, and a channel, and

in the routine, the drive use insulating gate type field effect transistor receives the voltage level held at the capacitor at its gate and passes a drive current having a current level in accordance with that through the light emitting element via the channel.

146-148. (canceled)

149. (currently amended) ~~A method of driving a light emitting element as set forth in claim 143, wherein~~ A method of driving a light emitting element for driving a current-driven type light emitting element arranged at an intersecting portion of a data line supplying a signal current of a current level in accordance with brightness information and a scanning line supplying a selection pulse and emitting light by the drive current, comprising

a receiving routine for fetching the signal current from said data line in response to a selection pulse from said scanning line,

a converting routine for converting a current level of the fetched signal current to a voltage level and holding the same, and

a drive routine for passing a drive current having a current level in accordance with the held voltage level through the light emitting element,

the converting routine includes a routine using a conversion use insulating gate type field effect transistor provided with a gate, a source, a drain, and a channel and a capacitor connected to the gate,

in the routine, the conversion use insulating gate type field effect transistor creates the voltage level converted by passing the fetched signal current through the channel in the receiving routine at the gate, and the capacitor holds voltage level created at the gate, and

the drive routine part shares the conversion use insulating gate type field effect transistor together with the converting part in a time division manner, and the drive routine separates the conversion use insulating gate type field effect transistor from the receiving part and uses the same for driving after the conversion of the signal current is completed and passes the drive current to the light emitting element through the channel in a state where the held voltage level is applied to the gate of the conversion use insulating gate type field effect transistor.

150. (original) A method of driving a light emitting element as set forth in claim 149, wherein the drive routine includes a control routine for cutting off an unnecessary current flowing to the light emitting element via the conversion use insulating gate type field effect transistor at times other than the time of drive.

151. (original) A method of driving a light emitting element as set forth in claim 150, wherein the control routine controls the voltage between terminals of two-terminal type light emitting element having a rectification function to cut off the unnecessary current.

152. (original) A method of driving a light emitting element as set forth in claim 150, wherein

the control routines comprises a routine using a control use insulating gate type field affect transistor inserted between the conversion use insulating gate type field effect transistor and the light emitting element, and

in the routine, the control use insulating gate type field effect transistor becomes nonconductive in state and separates the conversion use insulating gate type field effect transistor and the light emitting element when the light emitting element is

not driven and switches to the conductive state when the light emitting element is driven.

153. (original) A method of driving a light emitting element as set forth in claim 150, wherein the control routine controls a ratio between a time for cutting off the drive current when the light emitting element is not to be driven and placing the light emitting element in the nonlight emitting state and a time of passing the drive current when the light emitting element is to be driven and placing the light emitting element in the light emitting and thereby to enable the control of the brightness of the pixel.

154. (original) A method of driving a light emitting element as set forth in claim 150, wherein the drive routine includes a potential fixing routine for fixing the potential of the drain with reference to the source of the conversion use insulating gate type field effect transistor in order to stabilize the current level of the drive current flowing to the light emitting element through the conversion use insulating gate type field effect transistor.

155-165. (canceled)
